Amendments to Claims

This listing of Claims will replace all prior versions, and listings, of claims in the application:

Claim 1. (currently amended) An isolated nucleic acid encoding a polypeptide with isoflavone synthase activity having the amino acid sequence set forth in SEQ ID NO:66, wherein the nucleic acid ~~fragment~~ does not have ~~the nucleotide~~a nucleic acid sequence as set forth in SEQ ID NO:9~~, and wherein~~

~~Xaa_{10} is Phe or Leu~~
~~Xaa_{16} is Ser or Leu~~
~~Xaa_{23} is Ser or Thr~~
~~Xaa_{25} is Ile or Lys~~
~~Xaa_{39} is Lys or Arg~~
~~Xaa_{48} is Pro or Leu~~
~~Xaa_{60} is Pro or Leu~~
~~Xaa_{73} is Leu or His~~
~~Xaa_{74} is Ser or Tyr~~
~~Xaa_{95} is Ala or Thr~~
~~Xaa_{96} is Asn or His~~
~~Xaa_{102} is Asn or Ser~~
~~Xaa_{110} is Ile, Val, or Thr~~
~~Xaa_{112} is Arg or His~~
~~Xaa_{117} is Asn or Ser~~
~~Xaa_{118} is Ser or Leu~~
~~Xaa_{121} is Met or Arg~~
~~Xaa_{122} is Ala or Val~~
~~Xaa_{124} is Phe or Ile~~
~~Xaa_{129} is Lys or Arg~~
~~Xaa_{147} is Lys or Glu~~
~~Xaa_{159} is Leu or Phe~~
~~Xaa_{162} is Ala or Val~~
~~Xaa_{166} is Ser or Gly~~
~~Xaa_{170} is Gln or Arg~~
~~Xaa_{175} is Val or Leu~~
~~Xaa_{183} is Ala or Thr~~
~~Xaa_{187} is Thr or Ile~~
~~Xaa_{191} is Met or Val~~
~~Xaa_{209} is Phe or Tyr~~

~~Xaa_{219} is Arg or Trp~~
~~Xaa_{223} is Tyr or His~~
~~Xaa_{253} is Gly or Glu~~
~~Xaa_{259} is Lys or Glu~~
~~Xaa_{263} is Val or Asp~~
~~Xaa_{264} is Val, Asp, or Ile~~
~~Xaa_{268} is Ala or Val~~
~~Xaa_{272} is Phe or Leu~~
~~Xaa_{285} is Thr or Met~~
~~Xaa_{292} is Glu or Asp~~
~~Xaa_{294} is Thr, or Ile~~
~~Xaa_{301} is Phe or Leu~~
~~Xaa_{306} is Thr or Ile~~
~~Xaa_{311} is Val or Glu~~
~~Xaa_{312} is Val or Ala~~
~~Xaa_{325} is Arg or Lys~~
~~Xaa_{328} is Gln or Glu~~
~~Xaa_{334} is Val or Ala~~
~~Xaa_{342} is Arg or Ile~~
~~Xaa_{377} is Thr or Ile~~
~~Xaa_{381} is Glu or Gly~~
~~Xaa_{385} is Tyr, His, or Cys~~
~~Xaa_{387} is Ile or Thr~~
~~Xaa_{393} is Val or Ile~~
~~Xaa_{394} is Leu or Pro~~
~~Xaa_{402} is Arg or Lys~~
~~Xaa_{404} is Ser or Pro~~
~~Xaa_{413} is Ser or Phe~~
~~Xaa_{422} is Glu or Gly~~
~~Xaa_{428} is Gly or Arg~~
~~Xaa_{429} is Pro or Leu~~
~~Xaa_{435} is Gln or Arg~~
~~Xaa_{447} is Arg or Gly~~
~~Xaa_{453} is Asn, Ser, or Ile~~
~~Xaa_{459} is Met or Thr, and~~
~~Xaa_{485} is Asp or Gly.~~

Claim 2-3 (canceled).

Claim 4. (Currently amended) An isolated nucleic acid encoding a polypeptide with isoflavone synthase activity capable of converting 2S-flavanone into an isoflavonoid and wherein the nucleic acid ~~is~~does not have ~~a~~the nucleic acid sequence as set forth in SEQ ID NO:9.

Claim 5-10 (canceled).

Claim 11. (previously presented) A chimeric polynucleotide comprising the nucleic acid of Claim 1 operably linked to at least one regulatory sequence.

Claim 12. (previously presented) A transformed host cell comprising the chimeric polynucleotide of Claim 11.

Claim 13. (previously presented) The transformed host cell of Claim 12 further comprising a second chimeric polynucleotide comprising a nucleic acid encoding a polypeptide that regulates expression of at least one enzyme of the phenylpropanoid pathway.

Claim 14. (currently amended) The transformed host cell of Claim 13 wherein the second chimeric polynucleotide ~~comprises a chimera containing a polynucleotide encoding the maize R region, wherein the R region is between polynucleotide encoding the maize C1 DNA binding domain~~ encodes a polypeptide comprising the maize C1 DNA binding domain, the maize transcription factor R, and the maize C1 activation domain.

Claim 15. (original) The transformed host cell of Claim 12 wherein the host cell is a eukaryotic cell.

Claim 16. (original) The eukaryotic cell of Claim 13 wherein the cell is a yeast cell.

Claim 17. (original) The eukaryotic cell of Claim 15 wherein the cell is a plant cell.

Claim 18. (original) The plant cell of Claim 17 wherein the cell is a soybean cell.

Claim 19. (original) The plant cell of Claim 17 wherein the cell is a corn cell.

Claims 20-25. (canceled).

Claim 26. (previously presented) A method of altering the level of expression of isoflavone synthase in a host cell comprising:

(a) transforming a host cell with the chimeric polynucleotide of Claim 11 or transforming the host cell with the chimeric polynucleotide of Claim 11 and with a second chimeric polynucleotide comprising a nucleic acid sequence encoding a polypeptide that regulates expression of at least one enzyme of the phenylpropanoid pathway; and

(b~~c~~) growing the transformed host cell produced in step (a) under conditions that are suitable for expression of the chimeric polynucleotide

wherein expression of the chimeric polynucleotide results in production of altered levels of isoflavone synthase in the transformed host cell.

Claims 27 and 28 (canceled).

Claim 29. (previously presented) The method of Claim 26 wherein the host cell is a eukaryotic cell.

Claim 30. (previously presented) The method of Claim 26 wherein the eukaryotic cell is a yeast cell.

Claim 31. (previously presented) The method of Claim 26 wherein the eukaryotic cell is a plant cell.

Claim 32. (original) The method of Claim 31 wherein the plant cell is a soybean cell.

Claim 33. (original) The method of Claim 31 wherein the plant cell is a corn cell.

Claims 34-50 (canceled).

Claim 51. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Phe
Xaa_{16} is Leu
Xaa_{23} is Ser
Xaa_{25} is Lys
Xaa_{39} is Lys
Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Ser
Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn
Xaa_{110} is Ile
Xaa_{112} is Arg
Xaa_{117} is Asn
Xaa_{118} is Ser
Xaa_{121} is Met
Xaa_{122} is Val
Xaa_{124} is Phe
Xaa_{129} is Lys
Xaa_{147} is Lys
Xaa_{159} is Phe
Xaa_{162} is Val
Xaa_{166} is Ser

Xaa_{170} is Gln
Xaa_{175} is Val
Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Met
Xaa_{209} is Phe
Xaa_{219} is Trp
Xaa_{223} is Tyr
Xaa_{253} is Glu
Xaa_{259} is Lys
Xaa_{263} is Val
Xaa_{264} is Val
Xaa_{268} is Ala
Xaa_{272} is Phe
Xaa_{285} is Met
Xaa_{292} is Glu
Xaa_{293} is Gln
Xaa_{294} is Ile
Xaa_{301} is Phe
Xaa_{306} is Thr
Xaa_{311} is Val
Xaa_{312} is Ala
Xaa_{325} is Arg
Xaa_{328} is Gln
Xaa_{334} is Val
Xaa_{342} is Arg
Xaa_{377} is Thr
Xaa_{381} is Glu
Xaa_{385} is Tyr
Xaa_{387} is Ile
Xaa_{393} is Val
Xaa_{394} is Leu
Xaa_{402} is Arg
Xaa_{404} is Pro
Xaa_{413} is Phe
Xaa_{422} is Gly
Xaa_{428} is Gly
Xaa_{429} is Pro

Xaa_{435} is Gln
Xaa_{447} is Arg
Xaa_{453} is Asn
Xaa_{459} is Met, and
Xaa_{485} is Asp.

Claim 52. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Phe or Leu
Xaa_{16} is Leu
Xaa_{23} is Ser
Xaa_{25} is Lys
Xaa_{39} is Lys
Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Ser
Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn
Xaa_{110} is Thr
Xaa_{112} is Arg
Xaa_{117} is Asn
Xaa_{118} is Ser
Xaa_{121} is Met
Xaa_{122} is Val
Xaa_{124} is Phe
Xaa_{129} is Arg
Xaa_{147} is Lys
Xaa_{159} is Phe
Xaa_{162} is Val
Xaa_{166} is Ser
Xaa_{170} is Gln
Xaa_{175} is Val
Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Met
Xaa_{209} is Phe
Xaa_{219} is Trp

Xaa_{223} is Tyr
Xaa_{253} is Gly
Xaa_{259} is Glu
Xaa_{263} is Val
Xaa_{264} is Val
Xaa_{268} is Ala
Xaa_{272} is Phe
Xaa_{285} is Met
Xaa_{292} is Glu
Xaa_{293} is Gln
Xaa_{294} is Ile
Xaa_{301} is Leu
Xaa_{306} is Thr
Xaa_{311} is Val
Xaa_{312} is Ala
Xaa_{325} is Arg
Xaa_{328} is Gln
Xaa_{334} is Val
Xaa_{342} is Arg
Xaa_{377} is Thr
Xaa_{381} is Glu
Xaa_{385} is Tyr
Xaa_{387} is Ile
Xaa_{393} is Val
Xaa_{394} is Leu
Xaa_{402} is Arg
Xaa_{404} is Pro
Xaa_{413} is Phe
Xaa_{422} is Gly
Xaa_{428} is Gly
Xaa_{429} is Pro
Xaa_{435} is Gln
Xaa_{447} is Arg
Xaa_{453} is Asn
Xaa_{459} is Met, and
Xaa_{485} is Asp.

Claim 53. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Phe or Leu
Xaa_{16} is Leu
Xaa_{23} is Thr
Xaa_{25} is Lys
Xaa_{39} is Lys
Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Tyr
Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn
Xaa_{110} is Ile
Xaa_{112} is Arg
Xaa_{117} is Ser
Xaa_{118} is Leu
Xaa_{121} is Met
Xaa_{122} is Val
Xaa_{124} is Phe
Xaa_{129} is Lys
Xaa_{147} is Lys
Xaa_{159} is Phe
Xaa_{162} is Val
Xaa_{166} is Gly
Xaa_{170} is Gln
Xaa_{175} is Leu
Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Met
Xaa_{209} is Tyr
Xaa_{219} is Trp
Xaa_{223} is His
Xaa_{253} is Glu
Xaa_{259} is Lys
Xaa_{263} is Val
Xaa_{264} is Val

Xaa_{268} is Val
Xaa_{272} is Phe
Xaa_{285} is Thr
Xaa_{292} is Asp
Xaa_{293} is His
Xaa_{294} is Ile
Xaa_{301} is Phe
Xaa_{306} is Ile
Xaa_{311} is Val
Xaa_{312} is Ala
Xaa_{325} is Lys
Xaa_{328} is Glu
Xaa_{334} is Val
Xaa_{342} is Arg
Xaa_{377} is Thr
Xaa_{381} is Glu
Xaa_{385} is Tyr
Xaa_{387} is Ile
Xaa_{393} is Ile
Xaa_{394} is Leu
Xaa_{402} is Arg
Xaa_{404} is Pro
Xaa_{413} is Phe
Xaa_{422} is Gly
Xaa_{428} is Arg
Xaa_{429} is Pro
Xaa_{435} is Gln
Xaa_{447} is Gly
Xaa_{453} is Asn
Xaa_{459} is Met, and
Xaa_{485} is Gly.

Claim 54. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Phe or Leu
Xaa_{16} is Leu
Xaa_{23} is Thr
Xaa_{25} is Lys
Xaa_{39} is Lys

Xaa_{48} is Pro
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Tyr
Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn
Xaa_{110} is Ile
Xaa_{112} is Arg
Xaa_{117} is Ser
Xaa_{118} is Ser
Xaa_{121} is Met
Xaa_{122} is Val
Xaa_{124} is Phe
Xaa_{129} is Lys
Xaa_{147} is Lys
Xaa_{159} is Phe
Xaa_{162} is Val
Xaa_{166} is Ser
Xaa_{170} is Gln
Xaa_{175} is Val
Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Met
Xaa_{209} is Phe
Xaa_{219} is Trp
Xaa_{223} is Tyr
Xaa_{253} is Glu
Xaa_{259} is Lys
Xaa_{263} is Val
Xaa_{264} is Val
Xaa_{268} is Ala
Xaa_{272} is Phe
Xaa_{285} is Met
Xaa_{292} is Glu
Xaa_{293} is Gln
Xaa_{294} is Ile
Xaa_{301} is Phe

Xaa_{306} is Thr
Xaa_{311} is Val
Xaa_{312} is Ala
Xaa_{325} is Arg
Xaa_{328} is Gln
Xaa_{334} is Val
Xaa_{342} is Ile
Xaa_{377} is Thr
Xaa_{381} is Glu
Xaa_{385} is His
Xaa_{387} is Ile
Xaa_{393} is Val
Xaa_{394} is Leu
Xaa_{402} is Arg
Xaa_{404} is Pro
Xaa_{413} is Phe
Xaa_{422} is Gly
Xaa_{428} is Gly
Xaa_{429} is Pro
Xaa_{435} is Gln
Xaa_{447} is Arg
Xaa_{453} is Asn
Xaa_{459} is Met, and
Xaa_{485} is Asp.

Claim 55. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Phe or Leu
Xaa_{16} is Leu
Xaa_{23} is Thr
Xaa_{25} is Lys
Xaa_{39} is Lys
Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Tyr
Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn

Xaa_{110} is Ile
Xaa_{112} is Arg
Xaa_{117} is Ser
Xaa_{118} is Ser
Xaa_{121} is Met
Xaa_{122} is Val
Xaa_{124} is Phe
Xaa_{129} is Lys
Xaa_{147} is Lys
Xaa_{159} is Phe
Xaa_{162} is Val
Xaa_{166} is Gly
Xaa_{170} is Gln
Xaa_{175} is Leu
Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Val
Xaa_{209} is Phe
Xaa_{219} is Trp
Xaa_{223} is His
Xaa_{253} is Glu
Xaa_{259} is Lys
Xaa_{263} is Val
Xaa_{264} is Val
Xaa_{268} is Val
Xaa_{272} is Phe
Xaa_{285} is Met
Xaa_{292} is Asp
Xaa_{293} is His
Xaa_{294} is Ile
Xaa_{301} is Phe
Xaa_{306} is Thr
Xaa_{311} is Val
Xaa_{312} is Ala
Xaa_{325} is Lys
Xaa_{328} is Glu
Xaa_{334} is Val
Xaa_{342} is Arg

Xaa_{377} is Thr
Xaa_{381} is Glu
Xaa_{385} is Cys
Xaa_{387} is Thr
Xaa_{393} is Ile
Xaa_{394} is Leu
Xaa_{402} is Arg
Xaa_{404} is Pro
Xaa_{413} is Phe
Xaa_{422} is Gly
Xaa_{428} is Arg
Xaa_{429} is Leu
Xaa_{435} is Arg
Xaa_{447} is Arg
Xaa_{453} is Asn
Xaa_{459} is Met, and
Xaa_{485} is Gly.

Claim 56. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Leu
Xaa_{16} is Leu
Xaa_{23} is Thr
Xaa_{25} is Lys
Xaa_{39} is Lys
Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Tyr
Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn
Xaa_{110} is Ile
Xaa_{112} is Arg
Xaa_{117} is Ser
Xaa_{118} is Ser
Xaa_{121} is Met
Xaa_{122} is Val
Xaa_{124} is Phe

Xaa_{129} is Lys
Xaa_{147} is Lys
Xaa_{159} is Phe
Xaa_{162} is Val
Xaa_{166} is Gly
Xaa_{170} is Gln
Xaa_{175} is Leu
Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Met
Xaa_{209} is Phe
Xaa_{219} is Trp
Xaa_{223} is His
Xaa_{253} is Glu
Xaa_{259} is Lys
Xaa_{263} is Val
Xaa_{264} is Val
Xaa_{268} is Val
Xaa_{272} is Phe
Xaa_{285} is Met
Xaa_{292} is Asp
Xaa_{293} is His
Xaa_{294} is Ile
Xaa_{301} is Phe
Xaa_{306} is Thr
Xaa_{311} is Val
Xaa_{312} is Ala
Xaa_{325} is Lys
Xaa_{328} is Glu
Xaa_{334} is Ala
Xaa_{342} is Arg
Xaa_{377} is Thr
Xaa_{381} is Glu
Xaa_{385} is Tyr
Xaa_{387} is Ile
Xaa_{393} is Ile
Xaa_{394} is Leu
Xaa_{402} is Arg

Xaa_{404} is Pro
Xaa_{413} is Phe
Xaa_{422} is Gly
Xaa_{428} is Arg
Xaa_{429} is Pro
Xaa_{435} is Gln
Xaa_{447} is Arg
Xaa_{453} is Asn
Xaa_{459} is Met, and
Xaa_{485} is Gly.

Claim 57. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Leu
Xaa_{16} is Leu
Xaa_{23} is Thr
Xaa_{25} is Lys
Xaa_{39} is Lys
Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Tyr
Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn
Xaa_{110} is Ile
Xaa_{112} is Arg
Xaa_{117} is Ser
Xaa_{118} is Ser
Xaa_{121} is Met
Xaa_{122} is Val
Xaa_{124} is Phe
Xaa_{129} is Lys
Xaa_{147} is Lys
Xaa_{159} is Phe
Xaa_{162} is Ala
Xaa_{166} is Gly
Xaa_{170} is Gln
Xaa_{175} is Leu

Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Met
Xaa_{209} is Phe
Xaa_{219} is Trp
Xaa_{223} is His
Xaa_{253} is Glu
Xaa_{259} is Lys
Xaa_{263} is Val
Xaa_{264} is Val
Xaa_{268} is Val
Xaa_{272} is Phe
Xaa_{285} is Met
Xaa_{292} is Asp
Xaa_{293} is His
Xaa_{294} is Ile
Xaa_{301} is Phe
Xaa_{306} is Thr
Xaa_{311} is Val
Xaa_{312} is Ala
Xaa_{325} is Lys
Xaa_{328} is Glu
Xaa_{334} is Val
Xaa_{342} is Arg
Xaa_{377} is Thr
Xaa_{381} is Glu
Xaa_{385} is Tyr
Xaa_{387} is Ile
Xaa_{393} is Ile
Xaa_{394} is Leu
Xaa_{402} is Arg
Xaa_{404} is Pro
Xaa_{413} is Phe
Xaa_{422} is Gly
Xaa_{428} is Arg
Xaa_{429} is Pro
Xaa_{435} is Gln
Xaa_{447} is Arg

Xaa_{453} is Asn
Xaa_{459} is Met, and
Xaa_{485} is Gly.

Claim 58. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Leu
Xaa_{16} is Leu
Xaa_{23} is Thr
Xaa_{25} is Lys
Xaa_{39} is Lys
Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Tyr
Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn
Xaa_{110} is Iler
Xaa_{112} is Arg
Xaa_{117} is Ser
Xaa_{118} is Ser
Xaa_{121} is Met
Xaa_{122} is Val
Xaa_{124} is Phe
Xaa_{129} is Lys
Xaa_{147} is Lys
Xaa_{159} is Phe
Xaa_{162} is Val
Xaa_{166} is Gly
Xaa_{170} is Gln
Xaa_{175} is Leu
Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Met
Xaa_{209} is Phe
Xaa_{219} is Trp
Xaa_{223} is His
Xaa_{253} is Glu

Xaa_{259} is Lys
Xaa_{263} is Val
Xaa_{264} is Val
Xaa_{268} is Val
Xaa_{272} is Phe
Xaa_{285} is Thr
Xaa_{292} is Asp
Xaa_{293} is His
Xaa_{294} is Ile
Xaa_{301} is Phe
Xaa_{306} is Thr
Xaa_{311} is Val
Xaa_{312} is Ala
Xaa_{325} is Lys
Xaa_{328} is Glu
Xaa_{334} is Val
Xaa_{342} is Arg
Xaa_{377} is Thr
Xaa_{381} is Glu
Xaa_{385} is Tyr
Xaa_{387} is Ile
Xaa_{393} is Ile
Xaa_{394} is Leu
Xaa_{402} is Arg
Xaa_{404} is Pro
Xaa_{413} is Phe
Xaa_{422} is Gly
Xaa_{428} is Arg
Xaa_{429} is Pro
Xaa_{435} is Gln
Xaa_{447} is Arg
Xaa_{453} is Asn
Xaa_{459} is Met, and
Xaa_{485} is Gly.

Claim 59. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Leu
Xaa_{16} is Leu

Xaa_{23} is Thr
Xaa_{25} is Lys
Xaa_{39} is Lys
Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Tyr
Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn
Xaa_{110} is Ile
Xaa_{112} is Arg
Xaa_{117} is Ser
Xaa_{118} is Ser
Xaa_{121} is Met
Xaa_{122} is Val
Xaa_{124} is Phe
Xaa_{129} is Lys
Xaa_{147} is Lys
Xaa_{159} is Phe
Xaa_{162} is Val
Xaa_{166} is Gly
Xaa_{170} is Gln
Xaa_{175} is Leu
Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Met
Xaa_{209} is Phe
Xaa_{219} is Trp
Xaa_{223} is His
Xaa_{253} is Glu
Xaa_{259} is Lys
Xaa_{263} is Val
Xaa_{264} is Val
Xaa_{268} is Val
Xaa_{272} is Phe
Xaa_{285} is Met
Xaa_{292} is Asp

Xaa_{293} is His
Xaa_{294} is Ile
Xaa_{301} is Phe
Xaa_{306} is Thr
Xaa_{311} is Glu
Xaa_{312} is Ala
Xaa_{325} is Lys
Xaa_{328} is Glu
Xaa_{334} is Val
Xaa_{342} is Arg
Xaa_{377} is Thr
Xaa_{381} is Glu
Xaa_{385} is Tyr
Xaa_{387} is Ile
Xaa_{393} is Ile
Xaa_{394} is Leu
Xaa_{402} is Arg
Xaa_{404} is Pro
Xaa_{413} is Phe
Xaa_{422} is Gly
Xaa_{428} is Arg
Xaa_{429} is Pro
Xaa_{435} is Gln
Xaa_{447} is Arg
Xaa_{453} is Asn
Xaa_{459} is Met, and
Xaa_{485} is Gly.

Claim 60. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Leu
Xaa_{16} is Leu
Xaa_{23} is Thr
Xaa_{25} is Lys
Xaa_{39} is Lys
Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Tyr

Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn
Xaa_{110} is Ile
Xaa_{112} is Arg
Xaa_{117} is Ser
Xaa_{118} is Ser
Xaa_{121} is Met
Xaa_{122} is Val
Xaa_{124} is Ile
Xaa_{129} is Lys
Xaa_{147} is Lys
Xaa_{159} is Phe
Xaa_{162} is Val
Xaa_{166} is Gly
Xaa_{170} is Gln
Xaa_{175} is Leu
Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Met
Xaa_{209} is Phe
Xaa_{219} is Trp
Xaa_{223} is His
Xaa_{253} is Glu
Xaa_{259} is Lys
Xaa_{263} is Val
Xaa_{264} is Asp
Xaa_{268} is Val
Xaa_{272} is Phe
Xaa_{285} is Thr
Xaa_{292} is Asp
Xaa_{293} is His
Xaa_{294} is Ile
Xaa_{301} is Phe
Xaa_{306} is Thr
Xaa_{311} is Val
Xaa_{312} is Ala
Xaa_{325} is Lys

Xaa_{328} is Glu
Xaa_{334} is Val
Xaa_{342} is Arg
Xaa_{377} is Thr
Xaa_{381} is Glu
Xaa_{385} is Tyr
Xaa_{387} is Ile
Xaa_{393} is Ile
Xaa_{394} is Leu
Xaa_{402} is Arg
Xaa_{404} is Pro
Xaa_{413} is Phe
Xaa_{422} is Gly
Xaa_{428} is Arg
Xaa_{429} is Pro
Xaa_{435} is Gln
Xaa_{447} is Arg
Xaa_{453} is Asn
Xaa_{459} is Met
Xaa_{485} is Gly.

Claim 61. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Leu
Xaa_{16} is Leu
Xaa_{23} is Thr
Xaa_{25} is Lys
Xaa_{39} is Lys
Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Tyr
Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn
Xaa_{110} is Ile
Xaa_{112} is Arg
Xaa_{117} is Ser
Xaa_{118} is Ser

Xaa_{121} is Met
Xaa_{122} is Val
Xaa_{124} is Phe
Xaa_{129} is Lys
Xaa_{147} is Lys
Xaa_{159} is Phe
Xaa_{162} is Val
Xaa_{166} is Gly
Xaa_{170} is Gln
Xaa_{175} is Leu
Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Met
Xaa_{209} is Phe
Xaa_{219} is Trp
Xaa_{223} is His
Xaa_{253} is Glu
Xaa_{259} is Lys
Xaa_{263} is Val
Xaa_{264} is Val
Xaa_{268} is Val
Xaa_{272} is Phe
Xaa_{285} is Thr
Xaa_{292} is Asp
Xaa_{293} is His
Xaa_{294} is Ile
Xaa_{301} is Phe
Xaa_{306} is Thr
Xaa_{311} is Va
Xaa_{312} is Ala
Xaa_{325} is Lys
Xaa_{328} is Glu
Xaa_{334} is Val
Xaa_{342} is Arg
Xaa_{377} is Thr
Xaa_{381} is Glu
Xaa_{385} is Tyr
Xaa_{387} is Ile

Xaa_{393} is Ile
Xaa_{394} is Leu
Xaa_{402} is Arg
Xaa_{404} is Pro
Xaa_{413} is Phe
Xaa_{422} is Gly
Xaa_{428} is Arg
Xaa_{429} is Pro
Xaa_{435} is Gln
Xaa_{447} is Arg
Xaa_{453} is Asn
Xaa_{459} is Met, and
Xaa_{485} is Gly.

Claim 62. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Phe
Xaa_{16} is Leu
Xaa_{23} is Ser
Xaa_{25} is Lys
Xaa_{39} is Lys
Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Ser
Xaa_{95} is Ala
Xaa_{96} is His
Xaa_{102} is Ser
Xaa_{110} is Val
Xaa_{112} is Arg
Xaa_{117} is Asn
Xaa_{118} is Ser
Xaa_{121} is Met
Xaa_{122} is Val
Xaa_{124} is Phe
Xaa_{129} is Lys
Xaa_{147} is Glu
Xaa_{159} is Phe
Xaa_{162} is Val

Xaa_{166} is Ser
Xaa_{170} is Gln
Xaa_{175} is Val
Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Met
Xaa_{209} is Phe
Xaa_{219} is Trp
Xaa_{223} is Tyr
Xaa_{253} is Glu
Xaa_{259} is Lys
Xaa_{263} is Val
Xaa_{264} is Val
Xaa_{268} is Ala
Xaa_{272} is Phe
Xaa_{285} is Met
Xaa_{292} is Glu
Xaa_{293} is Gln
Xaa_{294} is Ile
Xaa_{301} is Phe
Xaa_{306} is Thr
Xaa_{311} is Val
Xaa_{312} is Ala
Xaa_{325} is Arg
Xaa_{328} is Gln
Xaa_{334} is Val
Xaa_{342} is Arg
Xaa_{377} is Thr
Xaa_{381} is Glu
Xaa_{385} is Tyr
Xaa_{387} is Ile
Xaa_{393} is Val
Xaa_{394} is Leu
Xaa_{402} is Lys
Xaa_{404} is Pro
Xaa_{413} is Phe
Xaa_{422} is Gly
Xaa_{428} is Gly

Xaa_{429} is Pro
Xaa_{435} is Gln
Xaa_{447} is Arg
Xaa_{453} is Asn
Xaa_{459} is Met, and
Xaa_{485} is Asp.

Claim 63. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Phe or Leu
Xaa_{16} is Ser
Xaa_{23} is Ser
Xaa_{25} is Ile
Xaa_{39} is Arg
Xaa_{48} is Leu
Xaa_{60} is Pro
Xaa_{73} is Leu
Xaa_{74} is Ser
Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn
Xaa_{110} is Ile
Xaa_{112} is His
Xaa_{117} is Asn
Xaa_{118} is Ser
Xaa_{121} is Met
Xaa_{122} is Val
Xaa_{124} is Phe
Xaa_{129} is Lys
Xaa_{147} is Lys
Xaa_{159} is Phe
Xaa_{162} is Val
Xaa_{166} is Ser
Xaa_{170} is Gln
Xaa_{175} is Val
Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Met
Xaa_{209} is Phe

Xaa_{219} is Trp
Xaa_{223} is Tyr
Xaa_{253} is Glu
Xaa_{259} is Lys
Xaa_{263} is Val
Xaa_{264} is Val
Xaa_{268} is Ala
Xaa_{272} is Phe
Xaa_{285} is Met
Xaa_{292} is Glu
Xaa_{293} is Gln
Xaa_{294} is Ile
Xaa_{301} is Phe
Xaa_{306} is Thr
Xaa_{311} is Val
Xaa_{312} is Val
Xaa_{325} is Arg
Xaa_{328} is Gln
Xaa_{334} is Val
Xaa_{342} is Arg
Xaa_{377} is Thr
Xaa_{381} is Glu
Xaa_{385} is Tyr
Xaa_{387} is Ile
Xaa_{393} is Val
Xaa_{394} is Leu
Xaa_{402} is Arg
Xaa_{404} is Pro
Xaa_{413} is Ser
Xaa_{422} is Gly
Xaa_{428} is Gly
Xaa_{429} is Pro
Xaa_{435} is Gln
Xaa_{447} is Arg
Xaa_{453} is Ser
Xaa_{459} is Met, and
Xaa_{485} is Asp.

Claim 64. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Phe or Leu
Xaa_{16} is Leu
Xaa_{23} is Thr
Xaa_{25} is Lys
Xaa_{39} is Lys
Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Tyr
Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn
Xaa_{110} is Ile
Xaa_{112} is Arg
Xaa_{117} is Ser
Xaa_{118} is Ser
Xaa_{121} is Met
Xaa_{122} is Val
Xaa_{124} is Phe
Xaa_{129} is Lys
Xaa_{147} is Lys
Xaa_{159} is Phe
Xaa_{162} is Val
Xaa_{166} is Ser
Xaa_{170} is Gln
Xaa_{175} is Val
Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Met
Xaa_{209} is Phe
Xaa_{219} is Trp
Xaa_{223} is Tyr
Xaa_{253} is Glu
Xaa_{259} is Lys
Xaa_{263} is Val
Xaa_{264} is Val

Xaa_{268} is Ala
Xaa_{272} is Phe
Xaa_{285} is Met
Xaa_{292} is Glu
Xaa_{293} is Gln
Xaa_{294} is Ile
Xaa_{301} is Phe
Xaa_{306} is Thr
Xaa_{311} is Val
Xaa_{312} is Val
Xaa_{325} is Lys
Xaa_{328} is Gln
Xaa_{334} is Ala
Xaa_{342} is Arg
Xaa_{377} is Thr
Xaa_{381} is Gly
Xaa_{385} is Tyr
Xaa_{387} is Ile
Xaa_{393} is Val
Xaa_{394} is Leu
Xaa_{402} is Arg
Xaa_{404} is Pro
Xaa_{413} is Phe
Xaa_{422} is Gly
Xaa_{428} is Gly
Xaa_{429} is Pro
Xaa_{435} is Gln
Xaa_{447} is Arg
Xaa_{453} is Asn
Xaa_{459} is Met, and
Xaa_{485} is Asp.

Claim 65. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Phe or Leu
Xaa_{16} is Leu
Xaa_{23} is Thr
Xaa_{25} is Lys
Xaa_{39} is Lys

Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Tyr
Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn
Xaa_{110} is Ile
Xaa_{112} is Arg
Xaa_{117} is Ser
Xaa_{118} is Ser
Xaa_{121} is Met
Xaa_{122} is Val
Xaa_{124} is Phe
Xaa_{129} is Lys
Xaa_{147} is Lys
Xaa_{159} is Phe
Xaa_{162} is Val
Xaa_{166} is Gly
Xaa_{170} is Gln
Xaa_{175} is Leu
Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Met
Xaa_{209} is Phe
Xaa_{219} is Trp
Xaa_{223} is His
Xaa_{253} is Glu
Xaa_{259} is Lys
Xaa_{263} is Asp
Xaa_{264} is Val
Xaa_{268} is Val
Xaa_{272} is Phe
Xaa_{285} is Met
Xaa_{292} is Asp
Xaa_{293} is His
Xaa_{294} is Ile
Xaa_{301} is Phe

Xaa_{306} is Thr
Xaa_{311} is Val
Xaa_{312} is Ala
Xaa_{325} is Lys
Xaa_{328} is Glu
Xaa_{334} is Val
Xaa_{342} is Arg
Xaa_{377} is Ile
Xaa_{381} is Glu
Xaa_{385} is Tyr
Xaa_{387} is Ile
Xaa_{393} is Ile
Xaa_{394} is Leu
Xaa_{402} is Arg
Xaa_{404} is Pro
Xaa_{413} is Phe
Xaa_{422} is Gly
Xaa_{428} is Arg
Xaa_{429} is Leu
Xaa_{435} is Gln
Xaa_{447} is Arg
Xaa_{453} is Asn
Xaa_{459} is Met, and
Xaa_{485} is Gly.

Claim 66. (previously presented) The isolated nucleic acid fragment of claim 1 where

Xaa_{10} is Phe or Leu
Xaa_{16} is Leu
Xaa_{23} is Thr
Xaa_{25} is Lys
Xaa_{39} is Lys
Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Tyr
Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn

Xaa_{110} is Ile
Xaa_{112} is Arg
Xaa_{117} is Ser
Xaa_{118} is Ser
Xaa_{121} is Arg
Xaa_{122} is Val
Xaa_{124} is Phe
Xaa_{129} is Lys
Xaa_{147} is Lys
Xaa_{159} is Phe
Xaa_{162} is Val
Xaa_{166} is Gly
Xaa_{170} is Gln
Xaa_{175} is Leu
Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Metl
Xaa_{209} is Phe
Xaa_{219} is Trp
Xaa_{223} is His
Xaa_{253} is Glu
Xaa_{259} is Lys
Xaa_{263} is Val
Xaa_{264} is Val
Xaa_{268} is Val
Xaa_{272} is Leu
Xaa_{285} is Met
Xaa_{292} is Asp
Xaa_{293} is His
Xaa_{294} is Ile
Xaa_{301} is Phe
Xaa_{306} is Thr
Xaa_{311} is Val
Xaa_{312} is Ala
Xaa_{325} is Lys
Xaa_{328} is Glu
Xaa_{334} is Val
Xaa_{342} is Arg

Xaa_{377} is Thr
Xaa_{381} is Glu
Xaa_{385} is Tyr
Xaa_{387} is Ile
Xaa_{393} is Ile
Xaa_{394} is Leu
Xaa_{402} is Arg
Xaa_{404} is Pro
Xaa_{413} is Phe
Xaa_{422} is Glu
Xaa_{428} is Arg
Xaa_{429} is Pro
Xaa_{435} is Gln
Xaa_{447} is Arg
Xaa_{453} is
Xaa_{459} is Met, and
Xaa_{485} is Gly.

Claim 67. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Phe or Leu
Xaa_{16} is Leu
Xaa_{23} is Thr
Xaa_{25} is Lys
Xaa_{39} is Lys
Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Tyr
Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn
Xaa_{110} is Ile
Xaa_{112} is Arg
Xaa_{117} is Ser
Xaa_{118} is Ser
Xaa_{121} is Met
Xaa_{122} is Ala
Xaa_{124} is Phe

Xaa_{129} is Lys
Xaa_{147} is Lys
Xaa_{159} is Phe
Xaa_{162} is Val
Xaa_{166} is Gly
Xaa_{170} is Gln
Xaa_{175} is Leu
Xaa_{183} is Thr
Xaa_{187} is Thr
Xaa_{191} is Met
Xaa_{209} is Phe
Xaa_{219} is Arg
Xaa_{223} is His
Xaa_{253} is Glu
Xaa_{259} is Lys
Xaa_{263} is Val
Xaa_{264} is Val
Xaa_{268} is Val
Xaa_{272} is Phe
Xaa_{285} is Thr
Xaa_{292} is Asp
Xaa_{293} is His
Xaa_{294} is Ile
Xaa_{301} is Phe
Xaa_{306} is Thr
Xaa_{311} is Val
Xaa_{312} is Ala
Xaa_{325} is Lys
Xaa_{328} is Glu
Xaa_{334} is Val
Xaa_{342} is Arg
Xaa_{377} is Thr
Xaa_{381} is Glu
Xaa_{385} is Tyr
Xaa_{387} is Ile
Xaa_{393} is Ile
Xaa_{394} is Leu
Xaa_{402} is Arg

Xaa_{404} is Ser
Xaa_{413} is Phe
Xaa_{422} is Gly
Xaa_{428} is Arg
Xaa_{429} is Pro
Xaa_{435} is Gln
Xaa_{447} is Arg
Xaa_{453} is Asn
Xaa_{459} is Met, and
Xaa_{485} is Gly.

Claim 68. (previously presented) The isolated nucleic acid fragment of Claim 1 where

Xaa_{10} is Phe or Leu
Xaa_{16} is Leu
Xaa_{23} is Thr
Xaa_{25} is Lys
Xaa_{39} is Lys
Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is Leu
Xaa_{74} is Tyr
Xaa_{95} is Thr
Xaa_{96} is His
Xaa_{102} is Asn
Xaa_{110} is Ile
Xaa_{112} is Arg
Xaa_{117} is Ser
Xaa_{118} is Ser
Xaa_{121} is Met
Xaa_{122} is Val
Xaa_{124} is Phe
Xaa_{129} is Lys
Xaa_{147} is Lys
Xaa_{159} is Leu
Xaa_{162} is Val
Xaa_{166} is Gly
Xaa_{170} is Gln
Xaa_{175} is Leu

Xaa_{183} is Thr
Xaa_{187} is Ile
Xaa_{191} is Met
Xaa_{209} is Phe
Xaa_{219} is Trp
Xaa_{223} is His
Xaa_{253} is Glu
Xaa_{259} is Lys
Xaa_{263} is Val
Xaa_{264} is Ile
Xaa_{268} is Val
Xaa_{272} is Phe
Xaa_{285} is Thr
Xaa_{292} is Asp
Xaa_{293} is His
Xaa_{294} is Ile
Xaa_{301} is Phe
Xaa_{306} is Thr
Xaa_{311} is Val
Xaa_{312} is Ala
Xaa_{325} is Lys
Xaa_{328} is Glu
Xaa_{334} is Val
Xaa_{342} is Arg
Xaa_{377} is Thr
Xaa_{381} is Glu
Xaa_{385} is Tyr
Xaa_{387} is Ile
Xaa_{393} is Ile
Xaa_{394} is Leu
Xaa_{402} is Arg
Xaa_{404} is Pro
Xaa_{413} is Phe
Xaa_{422} is Gly
Xaa_{428} is Arg
Xaa_{429} is Pro
Xaa_{435} is Gln
Xaa_{447} is Arg

Xaa_{453} is Asn
Xaa_{459} is Met, and
Xaa_{485} is Gly.

Claim 69. (currently amended) The isolated nucleic acid fragment of Claim 1 where
~~Xaa_{10} is Phe or Leu~~
Xaa_{16} is Leu
Xaa_{23} is Thr
Xaa_{25} is Lys
Xaa_{39} is Lys
Xaa_{48} is Leu
Xaa_{60} is Leu
Xaa_{73} is ~~Leu or~~ His
Xaa_{74} is ~~Ser or~~ Tyr
Xaa_{95} is ~~Ala or~~ Thr
Xaa_{96} is Asn ~~or His~~
Xaa_{102} is Asn ~~or Ser~~
Xaa_{110} is Ile~~, Val, or Thr~~
Xaa_{112} is Arg ~~or His~~
Xaa_{117} is ~~Asn or~~ Ser
Xaa_{118} is Ser ~~or Leu~~
Xaa_{121} is Met ~~or Arg~~
Xaa_{122} is ~~Ala or~~ Val
Xaa_{124} is Phe ~~or Ile~~
Xaa_{129} is Lys ~~or Arg~~
Xaa_{147} is Lys ~~or Glu~~
Xaa_{159} is ~~Leu or~~ Phe
Xaa_{162} is Ala ~~or Val~~
Xaa_{166} is ~~Ser or~~ Gly
Xaa_{170} is ~~Gln or~~ Arg
Xaa_{175} is ~~Val or~~ Leu
Xaa_{183} is Ala ~~or Thr~~
Xaa_{187} is ~~Thr or~~ Ile
Xaa_{191} is Met ~~or Val~~
Xaa_{209} is Phe ~~or Tyr~~
Xaa_{219} is ~~Arg or~~ Trp
Xaa_{223} is ~~Tyr or~~ His
Xaa_{253} is ~~Gly or~~ Glu
Xaa_{259} is Lys ~~or Glu~~

Xaa_{263} is Val ~~or Asp~~
Xaa_{264} is Val~~, Asp, or Ile~~
Xaa_{268} is ~~Ala or~~ Val
Xaa_{272} is Phe ~~or Leu~~
Xaa_{285} is ~~Thr or~~ Met
Xaa_{292} is ~~Glu or~~ Asp
Xaa_{293} is His
Xaa_{294} is Thr~~, or Ile~~
Xaa_{301} is Phe ~~or Leu~~
Xaa_{306} is Thr ~~or Ile~~
Xaa_{311} is Val ~~or Glu~~
Xaa_{312} is ~~Val or~~ Ala
Xaa_{325} is ~~Arg or~~ Lys
Xaa_{328} is ~~Gln or~~ Glu
Xaa_{334} is Val ~~or Ala~~
Xaa_{342} is Arg ~~or Ile~~
Xaa_{377} is Thr ~~or Ile~~
Xaa_{381} is Glu ~~or Gly~~
Xaa_{385} is Tyr~~, His, or Cys~~
Xaa_{387} is Ile ~~or Thr~~
Xaa_{393} is ~~Val or~~ Ile
Xaa_{394} is ~~Leu or~~ Pro
Xaa_{402} is Arg ~~or Lys~~
Xaa_{404} is ~~Ser or~~ Pro
Xaa_{413} is ~~Ser or~~ Phe
Xaa_{422} is ~~Glu or~~ Gly
Xaa_{428} is ~~Gly or~~ Arg
Xaa_{429} is Pro ~~or Leu~~
Xaa_{435} is Gln ~~or Arg~~
Xaa_{447} is Arg ~~or Gly~~
Xaa_{453} is Asn~~, Ser, or Ile~~
Xaa_{459} is ~~Met or~~ Thr, and
Xaa_{485} is ~~Asp or~~ Gly.

Claim 70. (new) The isolated nucleic acid fragment of Claim 4 wherein the polypeptide has the amino as sequence as set forth in SEQ ID NO:66.

Claim 71. (new) An isolated nucleic acid encoding a polypeptide having isoflavone synthase activity wherein the polypeptide is 95% identical to SEQ ID NO:2, and

wherein the nucleic acid does not have the nucleic acid sequence as set forth in SEQ ID NO:9.

Claim 72. (new) The isolated nucleic acid of Claim 71 wherein the polypeptide has the amino acid sequence as set forth in SEQ ID NO:66

Amendments to the Sequence Listing

The attached Sequence Listing includes definitions for the <223> lines in all the unsure. The amino acid sequence in SEQ ID NO:66 was amended at position 294 where Ile was replaced by Xaa. This Sequence Listing replaces the Sequence Listing originally filed with the application.

Attachment: Replacement Sequence Listing